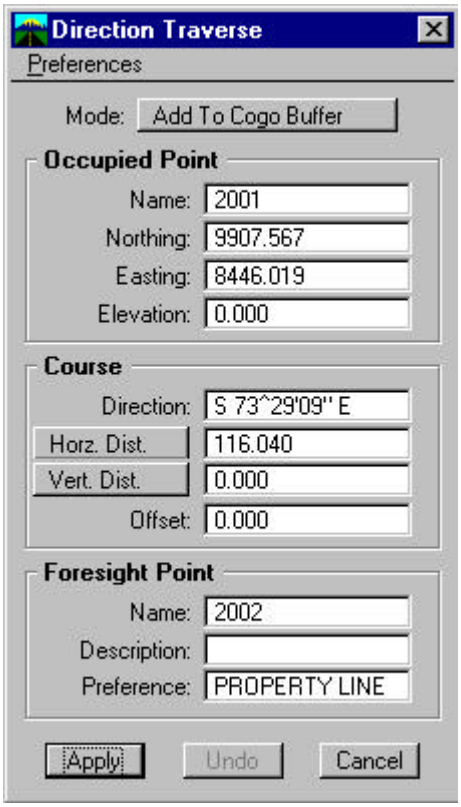
WRITING DEED DESCRIPTIONS…

Presented at 1998 KY Design Partnering Workshop
By Jeff Jasper

Let's go through a workflow to write a proposed right-of-way deed description…as presented at the 1998 KY Design Partnering Workshop. Our fictitious project is on KY 68. Our design objective is to widen KY 68 and add turn lanes into KY 1989. We have a manuscript delivered by our field survey crew. We also have deed descriptions of the properties that exist along the KY 68 corridor.

Our first task will be to define the existing property boundaries along KY 68. We will take the property deed descriptions and create Cogo Figures that represent the parcels. In our example we are going to show the Jones property which is at the KY 68 and KY 1989 intersection.

Our field crew located a right-of-way marker representing the Northwest corner of the Jones parcel. The right-of-way marker is Cogo point number 2001. We will use this point plus the bearings and distances from the Jones plat to establish the property corners.



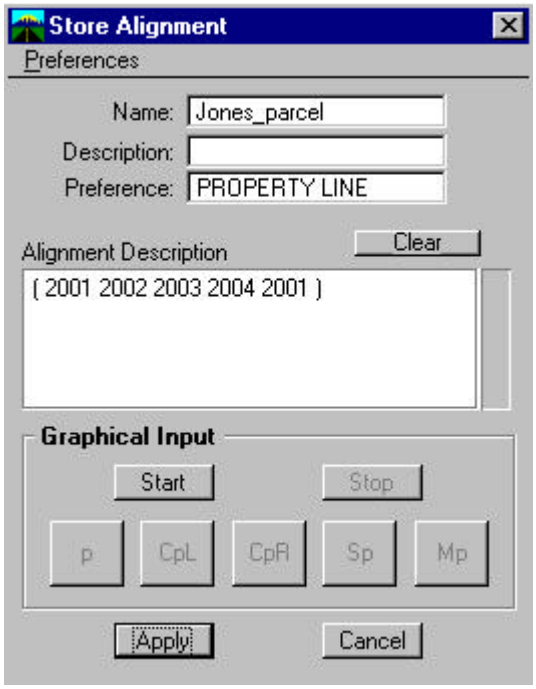
Go to **Palettes>Traverse>Direction Traverse**. This tool adds a Cogo point using an existing point and a direction / distance input. Turn the **Write Lock** off and the **Auto Plot** and **Point Snap** on. (NOTE: The **Settings > Locks >Point Snaplock** gives you the ability to snap or lock onto any point contained in the geometry project. For example, if you want to input point 2001 into the Occupied Point Name, you can toggle this lock on and place a data point in the design file close to the r/w marker. InRoads will find the closest point and display the point data in the dialog box.)

Input the following information to create the Jones property corners:

1. Occupy point **2001** and input the direction **S 73^29'09" E** and the distance **116.04'** to the foresight point **2002**. Choose the **PROPERTY LINE** Preference and hit **Apply**.

2. Occupy point **2002,** input the direction **N 19^08'10" E** and the distance **90.22'** to the foresight point **2003**, and **Apply**.

3. For the final point, occupy point **2001** and input the direction **N 21^46'04" E** and the distance **88.39'** to the foresight point **2004**. Hit **Apply**. (NOTE: By occupying point 2001 to set the point 2004, any error in the deed description will be forced to the back line of the parcel. This allows us to work with unadjusted distances and directions, which is a good practice when dealing with legal deed descriptions.)



We now need to store the Cogo points as an Alignment. Go to **Palettes> Figure>Store Alignment**. Be sure your **Write Lock** is off and the **Auto Plot** is on.

1. Name the Alignment **Jones_parcel**.

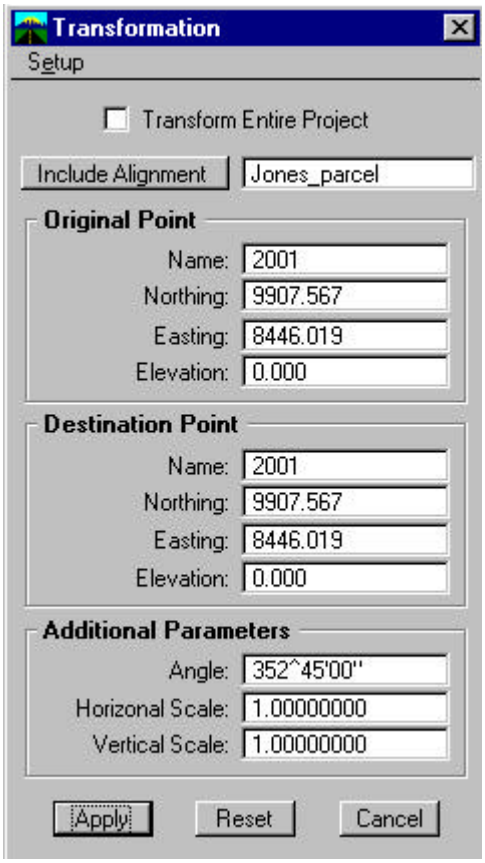
2. Choose the **PROPERTY LINE** preference.

3. Under the Alignment Description, enter the Cogo point numbers that make up the parcel. Be sure to close the figure by going back to the figure's starting Cogo point. In this example, the alignment is described as points 2001 through 2004 and then back to 2001. Now hit **Apply**.

You will notice that the Jones parcel does not fit perfectly onto our manuscript. The problem is one that occurs often when using existing deed descriptions with new surveys: the bearings do not line up. We will use the bearings from our survey, so we will need to adjust the Jones parcel to match our bearing system. To do this we will utilize the **Transformation** tool.

The **Transformation** tool translates, rotates, and/or scales points and alignments. It is a great tool to piece together the existing parcels' alignments. We will use it to rotate our Jones_parcel alignment.

Go to **Palettes> Locate>Transformation**. Be sure your **Write Lock** is off and the **Auto Plot** is on.



1. Select the command to **Include Alignment** and enter **Jones_parcel**.

2. Make both the Original Point and Destination Point **2001**. We do not want to Translate our alignment, so we will make the Original Point and Destination Point the same.

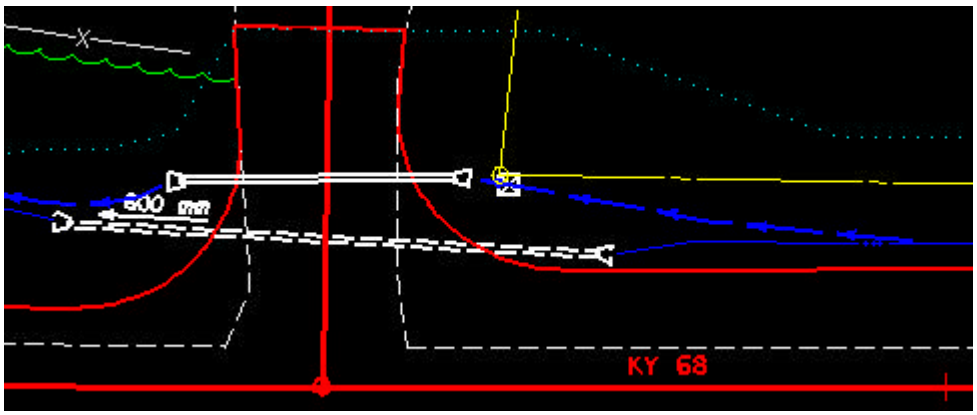
3. Enter in an angle of **–7^15'**. Leave the Scale equal to one. Now hit **Apply**.

The Jones Parcel should now line up with our manuscript. We need to save the work we have done to this point. Go **File>Geometry>Save**.

To display the Jones Parcel, turn the **Write Lock On** and **View Horizontal Geometry Annotation**.

With the existing Jones property now displayed, we will continue our example by defining the right of way we need to purchase from the Jones. The land we will purchase from the Jones will be the area disturbed by construction. We will now define a Cogo figure that encloses our construction limits. The road design is on level 7; turn on level 7 now.

The Proposed Design at KY 68 & KY 1989

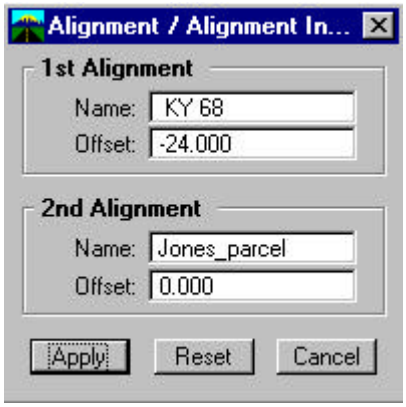


Our task now is to define the proposed right of way for the Jones parcel. We will use the construction limits and the existing property lines to create a Cogo Figure representing the proposed right of way.

We will begin with the East corner of the property. By using the **Utilities> Tracking> General Tracking Tool**, we can determine the offset from KY 68 for our first Cogo point. We will create a Cogo point in the Jones_parcel Alignment at a 24m offset from KY 68.

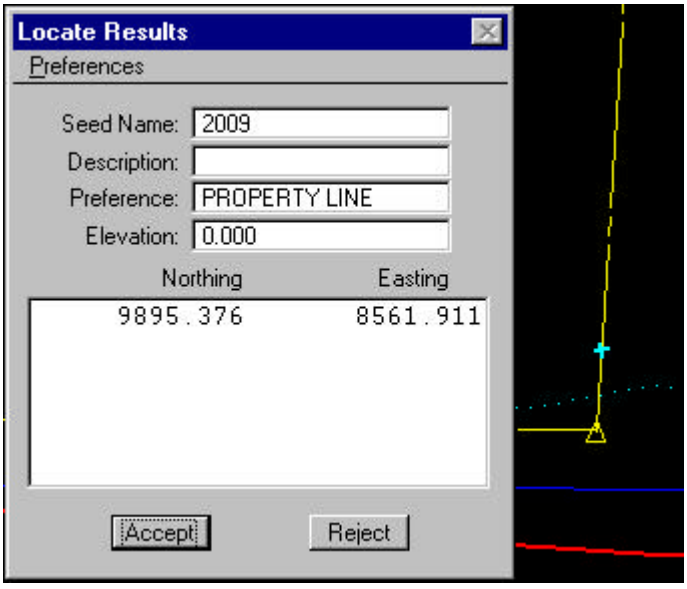
Go to **Palettes> Locate> Alignment / Alignment Intersect**. Be sure your **Write Lock** is off and the **Auto Plot** is on.

1. Choose 1st Alignment Name as **KY 68** and give an Offset of **–24**. Choose 2nd Alignment Name as **Jones_parcel** and give an Offset of **0**. Hit **Apply**.



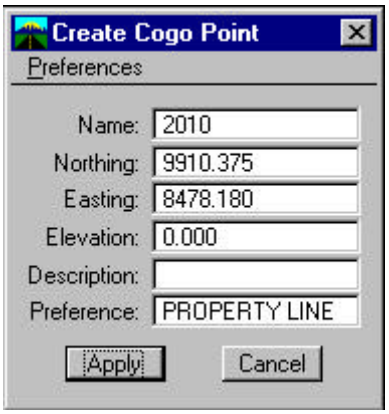
The Alignment / Alignment Intersect Command will locate all Cogo points that meet your input specifications. It then allows you to choose which of the points you wish to store.

2. Change the Seed Name to **2009** and the Preference to **Property Line**. There are two Cogo points that match the criteria we entered for this command. We want to **Accept** the Cogo point it shows us on the East side of the Jones_parcel. (See figure to the right). **Reject** the other Cogo point solution.



Now we will create a Cogo point in the middle of the parcel. We will us a station / offset from KY 68 to help us create the point. Once again, use the **Utilities> Tracking> General Tracking Tool** to find the station / offset.

Check to make sure your Active Alignment is **KY 68**. Go to **Palettes> Cogo Points > Create Cogo Point**. **Write Lock** should be off and the **Auto Plot** on.



1. Change the Name to **2010** and the Preference to **Property Line**.

2. Place a data point in the Northing field. From the Microstation command prompt type **so=19790, -27** and hit Enter. This will input the coordinates of the station 19+790 and the offset –27m off the active alignment.

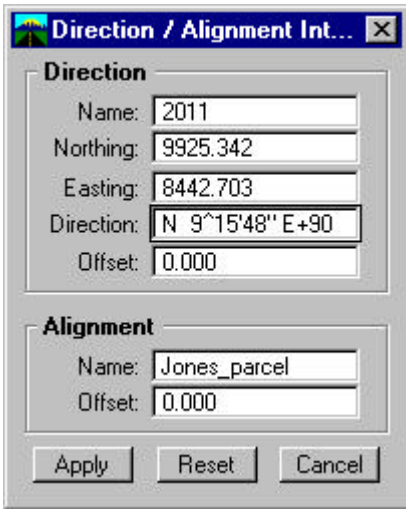
3. Hit **Apply**.

The next point we will place will be on the West side of the Jones parcel. Up to this we have created the Cogo points referencing the main line KY 68. We will now reference KY 1989. We will also go through a procedure that will create a Cogo point on the Jones_parcel at an even station off of KY 1989.

1. Change the Active Horizontal Alignment to **KY 1989**.

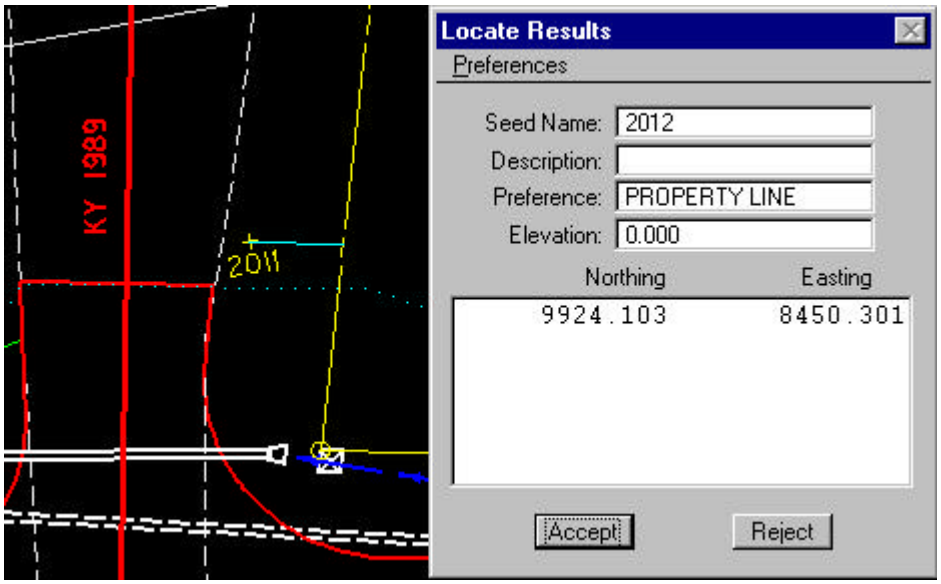
2. Go to **Palettes> Cogo Points > Create Cogo Point**. Create point number **2011** at station **0+037** and the offset **+10m**. Use the **so=** command as outlined above.

3. Go to **Palettes> Locate> Direction / Alignment Intersect**. Put in the Point Name **2011**; its coordinates will automatically populate the Northing / Easting fields.

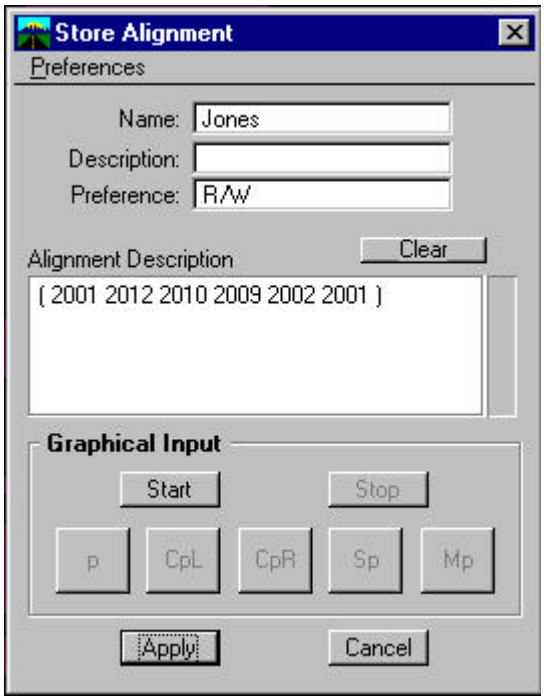


4. Now place a data point in the direction field. With the **Element Lock** on, put a data point on the KY 1989 centerline. InRoads will pick up the bearing from the alignment element. We want a perpendicular to KY 1989, so once the centerline bearing is in the Direction field, type **+90** at the end of the bearing. When you tab out of the Direction field, the perpendicular will be calculated for you.

5. Enter the **Jones_parcel** Alignment in the Alignment name. Now hit apply.



6. Make certain the Seed Name is **2012** and the Preference is **Property Line**. There are two possible solutions. **Reject** the solution on the East side of the parcel and **Accept** the solution on the West side of the parcel.



We now need to store the Cogo points as an Alignment. Go to **Palettes> Figure>Store Alignment**. Be sure your **Write Lock** is off and the **Auto Plot** is on.

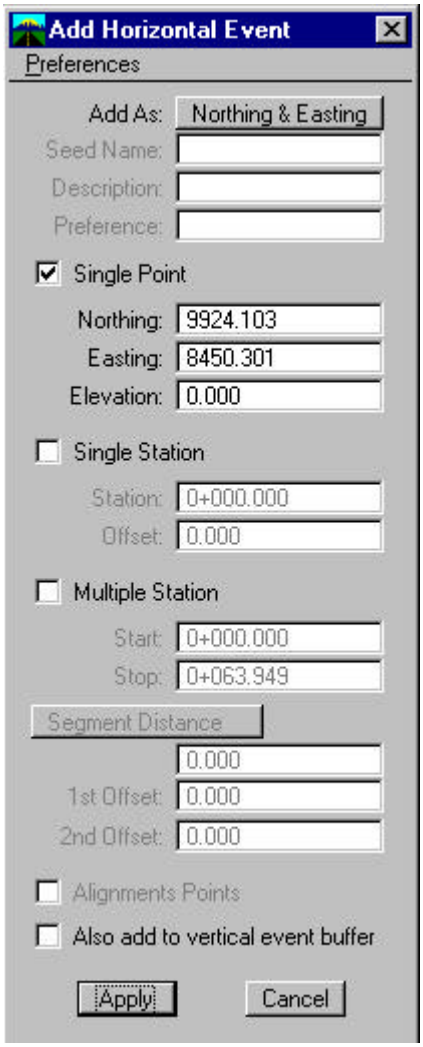
1. Name the Alignment **Jones**.

2. Choose the **R/W** preference.

3. Under the Alignment Description, enter the Cogo point numbers that make up the parcel. The points are (2001 2012 2010 2009 2002 2001). Now hit **Apply**.

The Jones Cogo Figure represents our proposed right away to purchase. We need a deed description of this alignment. Before we write a deed description, we need to reference the Cogo points of the Jones figure to centerline alignments. This will allow InRoads to write our deed description with Station / Offset calls to the referenced centerline.

Horizontal Event Points will be used to reference the Cogo points to centerline alignments. Event Points are stored under a parent Horizontal Alignment, so that association will be used to write the deed description report.



1. Make sure that KY 1989 is the Active Alignment.

2. Open **Palettes > Stationing & Events > Add Horizontal Event**.

3. Change the Add As field to **Northing & Easting**. Toggle on **Single Point**.

4. Place a data point in the Northing field. With the **Point Snap** on, place a data point in the design plane close to Point # 2012. The Northing and Easting field should be populated with the coordinates of Point # 2012 (9924.103, 8450.301).

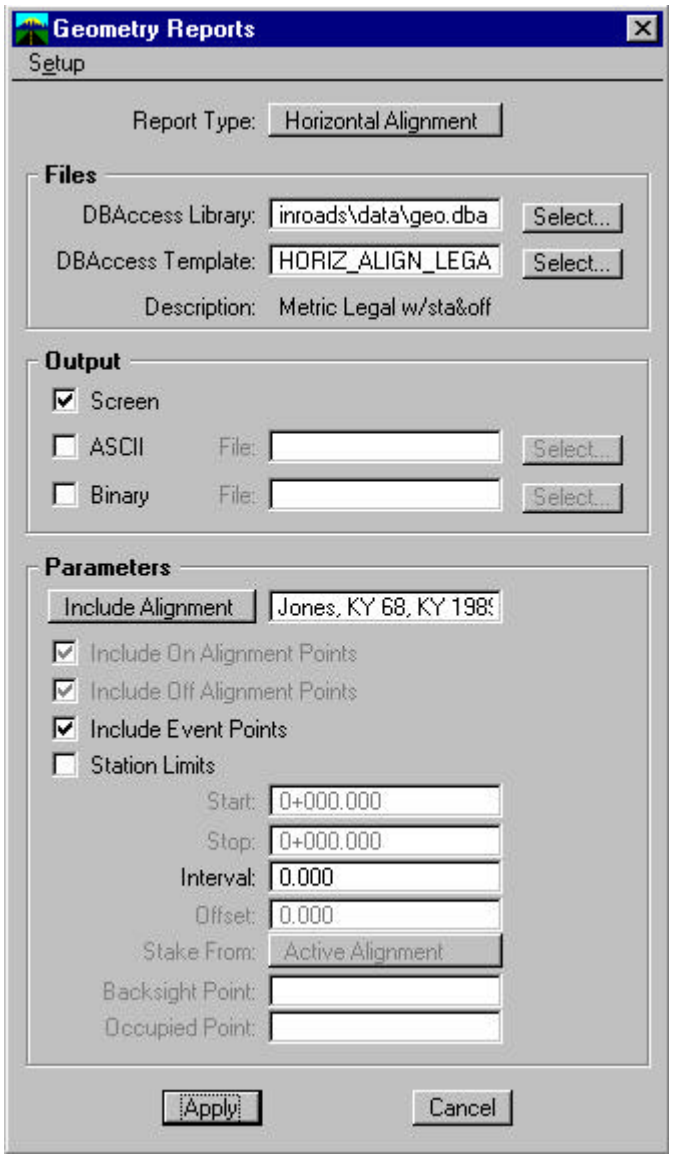
5. Hit **Apply**. An Event Point has now been placed in the KY 1989 alignment at the coordinates of Cogo Point # 2012. You can review Horizontal Event Points with the **Review Horizontal Event** Tool.

6. Change the Active Alignment to KY 68.

7. Repeat the process above for the following points:

   # 2001 (9907.567, 8446.019)
   # 2002 (9888.886, 8560.545)
   #2009 (9895.376, 8561.911)
   #2010 (9910.375, 8478.180)

We will now write the deed description for the Jones property. We will do this by creating a Geometry Report.



1. Go to **Utilities > Reports > Geometry**.

2. Report Type should be **Horizontal Alignment**. Change the DBAccess Library to **geo.dba** and the DBAccess Template to **HORIZ_ALIGN_LEGAL2D**. The deed description templates available are the different Horiz_Align_Legal templates.

3. Choose your Output source. For our example, toggle on **Screen**. You also can save your file as a ASCII or a Binary file.

4. Under the Parameters section, toggle on **Include Event Points**. Now select **Include Alignment** and type in the name of the alignments needed for this deed description. These are KY 68, KY 1989, and Jones. These names must be typed exactly the way they are stored **including spaces**. Use a comma between alignments.

NOTE: The report writer must process the centerline Horizontal Event points before it looks at the Parcel Alignment. (This allows the report writer to make the association between the centerline(s) and the Cogo points of the Parcel Alignment.) Therefore, the centerline alignment names must appear alphabetically before the parcel alignments. To do this store or rename the centerlines to have a space as the first character of the alignment name. In our example, this has already been done.

5. Hit **Apply**.

You now have a deed description of all three alignments. But the one we are interested in is the third report on the Jones alignment. When you save this to an ASCII or Binary file use an editor or a word processor to clean up. Then the Deed Description for the Jones property will be ready.

November 25, 1998 Report Template: HORIZ_ALIGN_LEGAL2D
Project: deeddesc
Alignment: Jones
Description: ne corner of KY 68 & KY 1989

Beginning at a point 19.670 meters (64.53 feet) left of KY 68 station 19+758.560

thence N 14^31'04" E, 17.081 meters (56.04 feet) to a point
17.698 meters (58.06 feet) right of KY 1989 station 0+037.000

thence S 63^47'04" E, 31.076 meters (101.95 feet) to a point
27.000 meters (88.58 feet) left of KY 68 station 19+790.000

thence S 79^50'38" E, 85.064 meters (279.08 feet) to a point
24.000 meters (78.74 feet) left of KY 68 station 19+875.011

thence S 11^53'10" W, 6.631 meters (21.76 feet) to a point
17.383 meters (57.03 feet) left of KY 68 station 19+874.577

thence N 80^44'09" W, 116.040 meters (380.71 feet) to a point
19.670 meters (64.53 feet) left of KY 68 station 19+758.560

and the POINT OF BEGINNING.

The above described parcel contains
0.1003 hectares (0.248 acres)
1003.0 sq.m. (10796.0 sq.ft.).

Deed Description after cleanup